303
History of Gestational Diabetes

Definition/ cut-off value

History of diagnosed gestational diabetes mellitus (GDM).

Presence of condition diagnosed by a physician as self-reported by applicant/participant/caregiver; or as reported or documented by a physician, or someone working under a physician's orders.

Participant category and priority level

Category	Priority
Pregnant Women	I
Breastfeeding Women	I
Non-Breastfeeding Women	III, IV, V, or VI

Justification

Women who have had a pregnancy complicated by GDM are 40-60% more likely to develop diabetes within 15-20 years (1), usually type 2 (2). This risk of subsequent diabetes is greatest in women with GDM who are diagnosed early in the pregnancy, exhibit the highest rates of hyperglycemia during the pregnancy, and are obese.

Approximately 30-50% of the women with a history of GDM will develop GDM in a subsequent pregnancy. Studies have found that the risk factors for subsequent GDM include insulin use in the index pregnancy, obesity, diet composition*, physical inactivity, failure to maintain a healthy BMI and weight gain between pregnancies (2, 3). In addition, if a woman's lipid levels are elevated, a history of GDM is also a risk factor for cardiovascular disorders (3).

There is evidence to suggest that some women with a history of GDM show relative beta-cell dysfunction during and after pregnancy (3). Most women with a history of GDM are insulin resistant. Changes in lifestyle (dietary and physical activity) may improve postpartum insulin sensitivity and could possibly preserve B-cell function to slow the progression to type 2 diabetes (2, 3).

During WIC nutrition education and counseling, obese women with a history of GDM should be encouraged to lose weight before a subsequent pregnancy. Breastfeeding has been shown to lower the blood glucose level and to decrease the incidence of type 2 diabetes in women with a history of GDM (2, 3). Exercise also has a beneficial effect on insulin action by enhancing peripheral tissue glucose uptake (3). Medical Nutrition Therapy (MNT) is an essential component in the care of women with a history of GDM.

Women with a history of GDM but without immediate subsequent postpartum diagnosis of diabetes should be advised to discuss with their medical provider the importance of having a Glucose Tolerance Testing (GTT) at 6 to 12 weeks postpartum (see Clarification, Table 1); to have a pre-pregnancy consultation before the next

pregnancy, and to request early glucose screening in the next pregnancy (4). The National Diabetes Education Program (NDEP) is currently promoting a GDM Diabetes Prevention Initiative, targeting both providers and women with a history of GDM (5). Key messages are illustrated in Table 2. (See Clarification).

WIC nutrition services can support and reinforce the MNT and physical activity recommendations that participants receive from the health care providers. In addition, WIC nutritionists can play an important role in providing women with counseling to help manage their weight after delivery. Also, children of women with a history of GDM should be encouraged to establish and maintain healthy dietary and lifestyle behaviors to avoid excess weight gain and reduce their risk for type 2 diabetes (1).

*** Diet Composition**

Carbohydrate is the main nutrient that affects postprandial glucose elevations. During pregnancy complicated with GDM, carbohydrate intake can be manipulated by controlling the total amount of carbohydrate, the distribution of carbohydrate over several meals and snacks, and the type of carbohydrate. These modifications need not affect the total caloric intake level/prescription (6).

Because there is wide inter-individual variability in the glycemic index each women needs to determine, with the guidance of the dietitian, which foods to avoid or use in smaller portions at all meals or during specific times of the day, for the duration of her pregnancy. Practice guidelines have avoided labeling foods as "good" or "bad" (6).

Meal plans should be culturally appropriate and individualized to take into account the patient's body habitus, weight gain and physical activity; and should be modified as needed throughout pregnancy to achieve treatment goals (6).

References

1. Evert AG, Vande Hei K. Gestational diabetes education and diabetes prevention strategies. Diabetes Spectrum. 2006; 19 (3):135-139.

2. Franz MJ, Biastre SA, Slocum J. Diabetes in the life cycle and research. In: Gestational diabetes - A core curriculum for diabetes education, American Association of Diabetes Educators. 5th ed. 2003; 145-163.

3. Thomas AM, Gutierrez YM. American Dietetic Association guide to gestational diabetes mellitus in postpartum considerations. Eds. American Dietetic Association. 2005; 101-113.

4. Kitzmiller JL, Dang-Kilduff L, Taslimi MM. Gestational diabetes after delivery: short-term management and long-term risks. Proceedings of the fifth international workshop — conference on Gestational Diabetes Mellitus. Diabetes Care. Jul 2007; 30 Suppl 2:S225-231.

5. Ratner RE. Prevention of type 2 diabetes in women with previous gestational diabetes. Proceedings of the fifth international workshop — conference on Gestational Diabetes Mellitus. Diabetes Care. Jul 2007; 30 Suppl 2:S242-245.

6. Reader DM. Medical nutrition therapy and lifestyle interventions. Proceedings of the fifth international workshop — conference on Gestational Diabetes Mellitus. Diabetes Care. Jul 2007; 30 Suppl 2:S188-193.

Clarification

Self-reporting of "History of…" conditions should be treated in the same manner as self-reporting of current conditions requiring a physician's diagnosis, i.e., the applicant may report to the CPA that s/he was diagnosed by a physician with a given condition at some point in the past. As with current conditions, self-diagnosis of a past condition should never be confused with self-reporting.

Table 1. Reasons for Delayed Postpartum Glucose Testing of Women with Prior Gestational Diabetes Mellitus (GDM)

1 . The substantial prevalence of glucose abnormalities detected by 3 months postpartum.

2 . Abnormal test results identify women at high risk of developing diabetes over the next 5 to 10 years.

3 . Ample clinical trial evidence in women with glucose intolerance that type 2 diabetes can be delayed or prevented by lifestyle interventions or modest and perhaps intermittent drug therapy.

4 . Women with prior GDM and impaired glucose tolerance (IGT) have cardiovascular disease (CVD) risk factors. Interventions may reduce subsequent CVD, which is the leading cause of death in both types of diabetes.

5 . Identification, treatment, and planning of pregnancy in women developing diabetes after GDM should reduce subsequent early fetal loss and major congenital malformations.

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Table 2. Gestational Diabetes Mellitus (GDM) Prevention Initiative from the National Diabetes Education Program

- GDM imparts lifelong risk for diabetes, mostly type 2.
- Modest weight loss and physical activity can delay or prevent type 2 diabetes.
- Offspring can lower risk by eating healthy foods, being active, and not becoming overweight.

Conservative recommendations to patients include:

- Let health care practitioners know of any history of GDM.
- Get glucose testing at 6 to 12 weeks postpartum, then every 1-2 years.
- Reach prepregnancy weight 6 to 12 months postpartum.
- If still overweight, lose at least 5 to 7% of weight slowly, over time, and keep it off.

Adapted from the National Diabetes Education Program.